

Presented to:

The United States of America
Department of Transportation
Federal Aviation Administration
Manager
Transport Directorate
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Petitioner:

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Subject:

Petition for Exemptions under FAR 11.63 from Title 14, Code of Federal Regulations for the Boeing Model 737-8 Serial Number: TBD

- 1) Section 25.785 (j) [Amdt 25-88] - "Firm Handhold"
- 2) Section 25.791 (a) [Amdt 25-72] "Passenger Information Sign, No Smoking"
- 3) Section 25.795 (a)(c)(3)(i) [Amdt 25-127] – "Security Considerations"
- 4) Section 25.813 (c)(2) [Amdt 25-88] "Emergency Exit Access"
- 5) Section 25.813 (e) [Amdt 25-88] "Interior Doors"

References:

- 1) ODA 955292-NE, Project No. ODA-GED-P298
- 2) Floor Plan (LOPA) for Executive Interior (See APPENDIX A)

ALOFT AeroArchitects is submitting this petition to request relief from the regulations listed above for a Boeing 737-8 aircraft equipped with an executive interior, as defined in the attached LOPA. The airplane is designated for private use under the operating rules of FAR Part 91.

General Background:

This Boeing 737-8 is intended to be an Executive VIP aircraft and under U.S. Registration. The STC certification is sought under ODA Project No. ODA-GED-P298. ALOFT AeroArchitects is contracted to install and certify an executive interior configuration. The interior arrangement is typical for a VIP private corporate business aircraft.

The petitioner requests relief from the following regulations:

Section 25.785 (j) Amendment 25-88 states:

Seats, berths, safety belts, and harnesses.

(j) If the seat backs do not provide a firm handhold, there must be a handgrip or rail along each aisle to enable persons to steady themselves while using the aisles in moderately rough air.

Section 25.791 (a) Amendment 25-72 states:

Passenger information signs and placards.

(a) If smoking is to be prohibited, there must be at least one placard so stating that is legible to each person seated in the cabin. If smoking is to be allowed, and if the crew compartment is separated from the passenger compartment, there must be at least one sign notifying when smoking is prohibited. Signs which notify when smoking is prohibited must be operable by a member of the flightcrew and, when illuminated, must be legible under all probable conditions of cabin illumination to each person seated in the cabin.

Section 25.795 (a)(c)(3)(i) Amendment 25-127 states:

Security Considerations

(a) Protection of flightcrew compartment. If a flightdeck door is required by operating rules:

(1) The bulkhead, door, and any other accessible boundary separating the flightcrew compartment from occupied areas must be designed to resist forcible intrusion by unauthorized persons and be capable of withstanding impacts of 300 joules (221.3 foot pounds).

(2) The bulkhead, door, and any other accessible boundary separating the flightcrew compartment from occupied areas must be designed to resist a constant 250 pound (1,113 Newtons) tensile load on accessible handholds, including the doorknob or handle.

(3) The bulkhead, door, and any other boundary separating the flightcrew compartment from any occupied areas must be designed to resist penetration by small arms fire and fragmentation devices to a level equivalent to level IIIa of the National Institute of Justice (NIJ) Standard 0101.04.

(c) An airplane with a maximum certificated passenger seating capacity of more than 60 persons or a maximum certificated takeoff gross weight of over 100,000 pounds (45,359 Kilograms) must comply with the following:

(3) Interior design to facilitate searches. Design features must be incorporated that will deter concealment or promote discovery of weapons, explosives, or other objects from a simple inspection in the following areas of the airplane cabin:

(i) Areas above the overhead bins must be designed to prevent objects from being hidden from view in a simple search from the aisle. Designs that prevent concealment of objects with volumes 20 cubic inches and greater satisfy this requirement.

Section 25.813 (c)(2)(ii) amendment 25-88 states:

Emergency exit access.

(c) The following must be provided for each Type III or Type IV exit—

(2) In addition to the access—

(ii) For airplanes that have a passenger seating configuration of 19 or fewer, there may be minor obstructions in this region, if there are compensating factors to maintain the effectiveness of the exit.

Section 25.813 (e) amendment 25-88 states:

Emergency exit access.

(e) No door may be installed in any partition between passenger compartments.

Petitioner's Request for Relief

ALOFT AeroArchitects formally requests an exemption from the regulations listed above, on Boeing Model 787-8 airplane S/N TBD, operated for private, not-for-hire carriage, and is designed to accommodate VIP passengers.

Specifically, ALOFT AeroArchitects provides reasoning and requests relief for each interior requirement as listed below:

- 1. Firm Handhold:** The proposed interior includes lounge areas, dining areas, guest rooms, bedrooms, lavatories, and staff seating, rather than traditional commercial type seating throughout. This aircraft layout configuration is quite different than that layout configuration envisioned by the original rule. The interior includes large rooms with limited seating and executive furnishings where the original requirements for firm handhold along aisles cannot be met. The risk to occupants due to the reduced number of direct handholds in certain areas of the airplane should be considered acceptable for the following reasons. All furniture in the passenger cabin will not have sharp corners and edges in order to avoid serious injury in case of contact during turbulence.
- 2. Passenger Information Signs (No Smoking):** Due to the low occupancy configuration and private nonsmoking operation of the aircraft, ALOFT would like to request relief from the extensive "no smoking" placarding required for commercial use type aircraft. The proposed placard configuration would consist of one large "no smoking" placard, which will be highly visible when entering the aircraft entryway.
- 3. Security Considerations:** The usage of the VIP Executive configured airplane is not for-hire and not-for common carriage. The requirements of 25.795(a) and 25.795(c)(3)(i), are intended for the safety of the airline public and is based on air-carrier type operations. The same rationale from Exemption No. 10686 for flight deck security can be applied. "That is the operator has control of and can restrict the population of passengers unlike an air carrier. The risk of passengers engaging in hazardous or malicious activity is essentially eliminated". Additionally, SFAR 109 exempts private use airplane from this regulation entirely. However, SFAR 109 was issued to address this kind of concern on private use airplane with passenger counts of 60 or less. Therefore, an exemption to the security considerations requirement, similar to that granted in Exemption No. 10686 and SFAR 109, is needed to allow the interior to meet the needs of the end customer.
- 4. Emergency exit Access:** The proposed interior includes an active overwing exit in front of a non-occupied divan seating location. This exit is in excess to the minimum number required by 14CFR 25.807(d)(1). This configuration will include divan cushions that are required to be removed to access the aircraft exit, which in some cases may be considered to be more than a minor obstruction. However, the exit opening is fully available once the cushions are

removed and meets other requirements of sections 25.809 through 25.813. ALOFT plans to treat this element as a “Special Condition” that will be reviewed further with the FAA to discuss exit access, signage and placarding, aisle width etc.

- 5. Interior Doors:** The proposed interior includes a door to separate the passenger compartment bedroom area and is typical of VIP interior configurations. Interior doors to partition the airplane into individual rooms is paramount to an acceptable interior for the end customer. The FAA acknowledged, in Exemption No. 18020, “the desirability of these features from the operator’s point of view,” and further acknowledged that when the regulations pertaining to interior doors were adopted, they did not consider “rooms.” The FAA defined five categories of doors in their analysis in Exemption No. 18020. The five categories are restated below:

Category 1: A door in a room and the room is less than the full width of the airplane. An aisle is outside the room. This type of room may be occupied during takeoff and landing, and only the occupants of the room must use the door to reach an exit.

Category 2: A door in a room and that is the same as Category 1, except a single emergency exit or pair of emergency exits is within the room.

Category 3: A door or doors in a compartment and the compartment is the full width of the airplane. Passengers are seated on both sides (fore and aft) of the door(s), and the main aisle leads out of, or passes through, the compartment. The compartment does not have emergency exits. This type of compartment may be occupied during takeoff and landing.

Category 4: A door in a room and the room is the full width of the airplane. Passengers are seated on both sides (fore and aft) of the door, and a pair of emergency exits is at one end of the room. This type of room may be occupied during takeoff and landing.

Category 5: A door in a room that may be the full width of the airplane. This type of room is not occupied during takeoff and landing. This room is only occupied during flight. Passengers are not seated on both sides of the door during taxi, takeoff, and landing. Passengers seated in taxi, takeoff, and landing seats must not need to pass through this door to get to any emergency exits.

The proposed VIP interior utilizes interior doors that fall into category 1 defined by the FAA and doors that do not fall into any of the above categories.

The interior doors are not electrically powered and will incorporate the following design features as mitigation for the relief requested:

- Dual latches to secure them in the open position
- Doors will be frangible to allow egress in the event they become stuck in the closed position
- Interior doors that are between seats occupiable for taxi, takeoff, and landing and any passenger exit such that the door crosses the egress path will have cockpit annunciation of the door position for taxi, takeoff, and landing.
- Doors to rooms that are not occupied for taxi, takeoff, and landing nor crossing an egress path will have placards installed on or near the door indicating that the door must be closed for taxi, takeoff, and landing.

These designs will provide an acceptable level of safety for this VIP interior configuration. Therefore, an exemption to the interior doors requirement, similar to that granted in Exemption No. 18020, is needed to meet the needs of the end customer.

In lieu of § 25.813(e):

- a. To maximize the level of safety, doors in Category 2, 3, 4, or 6, installed across the main cabin aisle, must open and close in a transverse direction. That is, the direction of motion of the door must be at a right angle to the longitudinal axis of the airplane. A “pocket door” is one example of such a design. This minimizes the chance that the inertia forces of an accident could force the door closed.
- b. Redundant means are necessary to latch doors open for takeoff and landing. Each latching device must have the capability of retaining the door in the takeoff and landing position under the inertia forces of § 25.561.
- c. Each interior door must be frangible, in the event that it is jammed in the closed position in flight or during taxi, takeoff, or landing. Frangibility is intended to ensure that if a door is jammed closed, occupants can escape in either direction and emergency equipment can be moved. Frangibility may be demonstrated in either of the following ways: A 5th percentile female can break through the door, creating a large enough opening that a 95th percentile (or larger) male can pass through. See Advisory Circular 25-17A, Transport

Justification:

The customer has purchased a center-aisle air transport jet aircraft (larger than the typical corporate business jets) for personal transportation to create a spacious and impressive atmosphere for travel.

The operation of this aircraft is limited to private use by an individual or a company and does not include scheduled flights, fare-paying public passengers or cargo-for-hire commercial service.

Occupant Safety Considerations:

The FAA has adjusted regulatory requirements based on specific design and operational factors numerous times in the past. This exemption will have no adverse impact on safety for the following reasons:

- The operation of this airplane is limited to private use by an individual or a company and does not include scheduled flights, fare-paying public passengers nor cargo-for-hire commercial service
- The proposed interior configuration is designed for a very small and highly controlled passenger population
- The mitigating design requirements proposed will establish an acceptable level of safety for the occupants consistent with previous grants of exemptions

Public Interest:

Sales of center-aisle transport jets, such as this 737-8 with an executive interior would suffer without granting these exemptions. The highly desirable executive interior configuration with private rooms and spacious environment could not be certified without this exemption. Granting this exemption would allow executives to conduct their business and create more public jobs. Granting these exemptions would be in the public interest because US manufacturers could sell more large aircraft outside the airline market.

Publication of Petition:

Aloft AeroArchitects requests that petition be processed, and the publication and comment procedures be waived in accordance with 14 CFR 11.29 and 11.87 for the following reasons:

- These types of exemption has been granted before for Boeing Business Jets 737-8 and is routinely granted for “Private, Not for Hire” aircraft with Executive or Head of State Interiors.
- The issue is non-controversial.
- Granting the petition would not set a precedent.

Conclusions:

The Federal Aviation Regulations do not consider private use Transport Category Aircraft. ALOFT AeroArchitects opinion is that the design of an aircraft interior for private use should justify the exemption. ALOFT AeroArchitects has proposed alternate features that provide the occupants an acceptable level of safety for the intended use of the aircraft.

The aircraft is scheduled for delivery back to the customer in August 2023 so ALOFT AeroArchitects is looking for a favorable response as soon as possible.

Thanks for your consideration of this request.

Sincerely,



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APPENDIX A – Aircraft LOPA

